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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,646	03/31/2000	Hiroshi Tomiyasu	HAG 128	1768

7590 09/20/2006

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EXAMINER .

RICKMAN, HOLLY C

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	09/540,646		TOMIYASU ET AL.	
	Examiner		Art Unit	
	Holly Rickman		1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) 20-25 and 80-102 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,7,9,10,29,31,34,36,39,41,45,47,51,53,56,58,62,64,68 and 70 is/are allowed.
- 6) ☐ Claim(s) 11,12,15-19,78 and 79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 1,4,7,9-12,15-25,29,31,34,36,39,41,45,47,51,53,56,58,62,64,68,70 and 78-102.

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 80-102 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: independent claims 80 and 91 are directed to species which are patentably distinct from the originally presented species.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 80-102 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11-12, 15-19, and 78-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (IEEE Trans Magn. Col. 31, no. 6, Nov. 1995, pp. 2728-2730).

Lee et al. disclose a magnetic recording medium having a substrate a multi-layered underlayer structure formed from alternating layers of NiAl and Cr deposited on the substrate and a magnetic layer thereon. One example of the inventive structure has the following

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underlayer structure: NiAl/Cr/NiAl/ Cr wherein the NiAl layers correspond to the claimed nonmagnetic layers, the first Cr layer corresponds to the claimed intermediate layer and the second Cr layer corresponds to the claimed "under film." See Table II, specimen D. The reference fail to disclose the claimed range of 100-550 Angstroms for the thickness of the nonmagnetic layers. However, the reference clearly teaches that the thickness of the NiAl layers affect the coercivity. The reference gives several examples in Figure 3 wherein the thickness of the NiAl layer is within the claimed range (i.e., 25 nm for example). It would have been obvious to one of ordinary skill in the art at the time of invention to choose a suitable thickness for the NiAl layers, such as 25 nm, based on the desired coercivity of the recording medium.

Furthermore, it is noted that Lee et al. disclose that the thickness of the Cr layers can be 2.5 nm which reads on the claimed intermediate layer thickness range of 5-50 Angstroms.

It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

4. Claims 1, 4, 7, 9-10, 29, 31, 34, 36, 39, 41, 45, 47, 51, 53, 56, 58, 62, 64, 68, and 70 are allowable over the closest prior art to Kanbe et al. (US 6403240). Kanbe et al. fail to teach or suggest the claimed recording medium including a CrC layer containing Mn.

Response to Arguments

5. Applicant's arguments filed 6/27/06 have been fully considered but they are not persuasive with respect to the rejection of the claims as being obvious over Lee et al.

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Applicant argues that Lee et al. do not teach the claimed thickness range for the intermediate layer. However, the examiner notes that the reference does disclose an example wherein the thickness for the Cr layer is 2.5 nm (i.e. 25 Angstrom). Thus, the reference does meet this claim limitation.

Applicant argues that the thickness of the intermediate layer is not a mere matter of design. Applicant maintains that applicant's have discovered unexpected and advantageous results from such film thickness. This is a moot point because the reference explicitly discloses a thickness within the disclosed range.

The examiner maintains that a prima facie case of obviousness has been set forth.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Holly Rickman', with a long horizontal flourish extending to the right.

Holly Rickman
Primary Examiner
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